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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/074,932	02/11/2002	Corrie L. Carnes	32357	8602

7590 06/03/2004

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EXAMINER	
BOS, STEVEN J	

ART UNIT	PAPER NUMBER
1754	

DATE MAILED: 06/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/074,932	CARNES ET AL.	
	Examiner	Art Unit	
	Steven Bos	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-66* is/are pending in the application.

4a) Of the above claim(s) *22-29,38-44,46-66* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21,30-37 and 45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-66* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *02142003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Applicant's election without traverse of Group I in Paper No. 04292004 is acknowledged.

Claims 22-29,38-44,46-66 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 04292004.

In claims 1,12, the word "the" should be deleted from "the oxides" and "the elements" and "the transition metals" and "the lanthanide series" for clarity. In claim 8, the word "the" should be deleted from "the oxides". In claim 18, the word "the" should be deleted from "the oxides" for clarity. In claim 30, the word "the" should be deleted from "the transition metals" and "the lanthanide series" for clarity. In claim 33, "soid" is misspelled. In claim 34, the word "the" should be deleted from "the solid hydroxides" for clarity.

Claims 8,9,18,19,34 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Each of these claims contain elements which are not included by the independent claims recitation of "Groups IIA,IIIA,IVA, transition metals, and lanthanide series of the Periodic Table".

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1,4,15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

In claims 1,4,15, "at least one of the materials exhibiting an average crystallite size of from about zero up to about 4 nm by XRD analysis" does not appear to be enabled since this language provides for sizes of zero or less than zero, due to the scope of the phrase "about zero," thus the material would have a negative size or would have no size, ie. would not exist, neither of which is physically possible. It appears that – of from above zero – was intended.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1,4,6,7,9, rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, "at least one of the materials exhibiting an average crystallite size of from about zero up to about 4 nm by XRD analysis" is indefinite as to how the crystallite

size can be zero or less since this is physically impossible. It appears that – of from above zero – was intended.

In claims 1,12, "intimately intermingled on a molecular level" is indefinite as to what the metes and bounds of this phrase are, ie. what is considered to be "intimately intermingled on a molecular level"?

In claims 1,12, "Groups IIIA,IVA" of the Periodic Table is indefinite as to which elements this refers to since there are two versions of the Periodic Table, IUPAC and CAS.

In claims 6,7,17, "said at least one nanocrystalline solid were prepared alone" lack(s) proper antecedent basis in the claim(s).

In claims 9,19, "there being two of said different materials ... Al2O3.MgO.TiO2" is indefinite because this material contains 3 different materials.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-21,30-37,45 are rejected under 35 U.S.C. 103(a) as being unpatentable over The Chemical and Catalytic Properties ... Modified Sol-Gel Synthesis" by Corrie Leigh Carnes.

Carnes suggests the instantly claimed composition but may differ in that all the product characteristics are not stated.

Where the claimed and prior art product(s) are identical or substantially identical, or are produced by identical or substantially identical process(es) the burden of proof is on applicant to establish that the prior art product(s) do not necessarily or inherently possess the characteristics of the instantly claimed product(s), see In re Best, 195 USPQ 430.

Any difference imparted by the product by process limitations would have been obvious to one having ordinary skill in the art at the time the invention was made

because where the examiner has found a substantially similar product as in the applied prior art the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show the same process of making, In re Brown, 173 USPQ 685, In re Fessmann, 180 USPQ 324, In re Spada, 15 USPQ2d 1655, In re Fitzgerald, 205 USPQ 594, and MPEP 2113.

Claims 1-21,45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lai '650.

Lai suggests the instantly claimed solid oxide composition by teaching nanocrystalline zeolites having crystallite sizes of about 10 angstroms or 1 nm. See col. 6. Zeolites are solid compositions of various combinations of alumina, magnesia, calcium oxide and magnesia.

Where the claimed and prior art product(s) are identical or substantially identical, the burden of proof is on applicant to establish that the prior art product(s) do not necessarily or inherently possess the characteristics of the instantly claimed product(s), see In re Best, 195 USPQ 430.

Claims 30-37,45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burba, III '139 or Burba, III '271.

Burba, III '139 suggests the instantly claimed solid hydroxide composition. See col. 4. Burba, III '271 suggests the instantly claimed solid hydroxide composition. See cols. 4,5.

Where the claimed and prior art product(s) are identical or substantially identical, the burden of proof is on applicant to establish that the prior art product(s) do not necessarily or inherently possess the characteristics of the instantly claimed product(s), see In re Best, 195 USPQ 430.

Claims 1-21,45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koper '488 or Klabunde '294.

Kopper and Klabunde each suggests the instantly claimed solid oxide composition. See col. 2 of each.

Where the claimed and prior art product(s) are identical or substantially identical, the burden of proof is on applicant to establish that the prior art product(s) do not necessarily or inherently possess the characteristics of the instantly claimed product(s), see In re Best, 195 USPQ 430.

Claims 1-21,30-37,45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koper '519.

Koper suggests the instantly claimed solid oxide or hydroxide composition but may differ in that all the product characteristics are not stated. See the abstract and col. 2.

Where the claimed and prior art product(s) are identical or substantially identical, the burden of proof is on applicant to establish that the prior art product(s) do not

necessarily or inherently possess the characteristics of the instantly claimed product(s), see In re Best, 195 USPQ 430.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Bos whose telephone number is 571-272-1350. The examiner can normally be reached on M-F, 8AM-6PM but is on increased flexitime sch.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven Bos
Primary Examiner
Art Unit 1754

sjb